

## REMARKS

Claims 1-15 are now pending in the application. By this paper, Claim 6 has been amended and Claim 15 has been added. The basis for this amendment and new claim can be found throughout the specification, claims, and drawings originally filed. No new matter has been added. The preceding amendment and the following remarks are believed to be fully responsive to the outstanding Office Action and are believed to place the application in condition for allowance.

The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendment and remarks contained herein.

## REJECTION UNDER 35 U.S.C. § 112

Claims 6 and 7 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point and distinctly claim the subject matter which Applicants regard as the invention.

This rejection is respectfully traversed.

Claim 6 has been amended to depend from Claim 3. Applicants respectfully submit that the amendment does not narrow the scope of the claim and that Claims 6 and 7 are now in condition for allowance. Reconsideration and withdrawal of the rejection is respectfully requested.

**REJECTION UNDER 35 U.S.C. § 103**

Claims 1, 9-10 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sharood et al. (U.S. Pat. No. 6,453,687) in view of Wiggs (U.S. Pat. No. 4,463,571).

Claims 2-6 and 11-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sharood et al. in view of Wiggs as applied to Claim 1 above, and further in view of Katsuki (U.S. Pat. No. 6,158,230).

Claims 8 and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sharood et al. in view of Wiggs as applied to Claim 1 above, and further in view of Day III et al. (U.S. Pat. No. 4,387,368).

Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Sharood et al. in view of Wiggs and Katsuki as applied to Claim 2 above, and further in view of Day III et al.

These rejections are respectfully traversed.

Independent Claim 1 calls for a diagnostic system for a compressor assembly including a compressor and a motor protector. The diagnostic system includes logic circuitry associated with the motor protector that analyzes a status of the motor protector as a function of time and identifies a specific fault cause. Similarly, independent Claim 10 calls for a method for diagnosing a compressor assembly including a compressor and a motor protector. The method includes analyzing a status of the motor protector as a function of time and identifying a compressor fault cause based on analyzing the status of the motor protector as a function of time.

The present teachings call for a diagnostic system (100) for use with a compressor. See Specification at pg. 18, Paragraph [0044]. In one aspect of the teachings, the diagnostic system is used in conjunction with a three-phase compressor and monitors a protector associated with the compressor to determine a specific fault based on how long the protector is in a tripped condition (144). See Specification at pg. 18, Paragraph [0044], pg. 19, Paragraph [0047], and FIGS. 4 and 5. When operating in the tripped condition, one of four paths can be followed, with each path representing a different fault. See Specification at pg. 19, Paragraph [0047] and FIGS. 4 and 5.

For example, if the protector is in the tripped condition, and a moving window average of an ON time of the compressor system is greater than fifteen minutes, the system moves to a multiple long run condition (170). If the protector is in the tripped condition, and a moving average of the ON time of the compressor system is greater than four hours, the system moves to a power loss or protector defective condition (176). In this manner, the diagnostic system of the present teachings analyzes a status of the motor protector as a function of time and identifies a specific fault cause based on the analysis.

Sharood and Wiggs, either in combination or alone, fail to teach or suggest a diagnostic system for use with a compressor that analyzes a status of a motor protector associated with the compressor as a function of time to identify a specific fault cause.

Sharood teaches a plug for use in monitoring household appliances. In one embodiment, Sharood teaches using a current sensor (610) and a measure and transmit circuit (620) to measure current drawn by an appliance. See Sharood at Col. 9, Ins. 6-9 and FIGS. 6c and 6d. In another embodiment, Sharood teaches using a retrofit

plug (2650) with a refrigeration device to monitor a run time of a compressor. See Sharood at Col. 27, Ins. 59-65. Sharood fails to teach monitoring a motor protector.

Wiggs teaches a heat pump system including a compressor (10) using a high-pressure switch (22) and a low-pressure switch (36). See Wiggs at Col. 3, Ins. 10-15 and Col. 4, Ins. 3-7. The switches include separate capacitive/relay sensing circuits (58, 68) that are individually provided to identify which source switch has opened to distinguish between a high-pressure condition and a low-pressure condition. See Wiggs at Col. 4, Ins. 4-12. The respective circuits selectively illuminate a signal light to identify which switch (i.e., high or low) caused a failure in the heat pump system. See Wiggs at Col. 4, Ins. 12-25 and 58-64. In this manner, Wiggs fails to teach monitoring a motor protector as a *function of time*. Rather, Wiggs simply teaches monitoring a high-pressure switch and a low pressure switch to aid in distinguishing a high-pressure condition from a low-pressure condition.

In light of the foregoing remarks, Applicants respectfully submit that Sharood and Wiggs, either in combination or alone, fail to teach or suggest analyzing a status of a motor protector as a function of time to identify a specific fault cause.

Because Wiggs does not disclose analyzing a status of a motor protector as a function of time, and none of the cited references cures this deficiency on Wiggs, Applicants' invention is not taught or suggested by the prior art and reconsideration and withdrawal of the rejection is respectfully requested.

In this manner, it is believed that independent Claims 1 and 10, as well as Claims 2-9 and 11-14, respectively dependent therefrom, are in a condition for allowance in

light of the art of record. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection.

**NEW CLAIMS**

Claim 15 is added for consideration.

**CONCLUSION**

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

By:   
Michael Malinzak, Reg. No. 43,770

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HARNESS, DICKEY & PIERCE, P.L.C.  
P.O. Box 828  
Bloomfield Hills, Michigan 48303  
(248) 641-1600

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